Pest Update (June 16, 2010)

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of dying plants or insect from other states. If you live outside of South Dakota and have a question, please send a digital picture of the pest or problem instead.

Available on the net at:
http://sdda.sd.gov/Forestry/Educational-Information/PestAlert-Archives.aspx

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Plant development for the growing season

We are seeing the catalpas starting to bloom so we are about on schedule for the year.

Treatments to do now

Mountain pine beetle. We do not have many pest treatments to begin at this time of year. Most disease have already infected the foliage and foliar-feeding insects and borers have already come and gone or have burrowed into the protective inner bark or wood. However we have one insect in which treatments can still be initiated and that is the mountain pine beetle (*Dendroctonus ponderosae*). This insect is entering its 13th year of the epidemic that is spreading throughout the forests of the Black Hills. The infestation that was originally concentrated on Federal land, most notably Beaver Park in the late 1990s has spread into the Deerfield and Black Elk Wilderness Area among other location within Federal and private land during the last five years. The insect attacks trees in mid-summer, the flight often peaking during Rally week, and the eggs are laid in the inner bark. The small, white, grub-like larvae soon hatch and begin feed which continues until late spring of the following year before become pupae and then adults.

Ponderosa pine trees attempt to defend themselves by producing resin to “pitch” the adult beetles out as they burrow in. Sometimes you can find a successful pitch out with the beetle still stuck in the whitish brown glob of resin. However, far more often the lower 15 or 20 feet of the tree is covered with dozens of pitch masses aligning the trunk, evidence of a successful attack. Attacked trees die by the spring following a successful mass attack by the beetles. These trees can not only be identified by the numerous pitch masses formed last August as the beetles burrowed in but by the foliage which is now becoming discolored. Later this summer as the adult beetles fly from their now-dead hosts, the tree will have red needles that turn ashen-gray and drop by the second year.

Mountain pine beetle occurs only West River and in the Black Hills and adjacent forests. It is best managed by thinning the forest, creating a more open stand improves the tree’s capability to defend itself and also provides an environment

less favorable for the beetle. Removing and destroying (or utilizing) infested trees before the beetles emerge is also an effective strategy when combined with thinning. High-value trees, those surrounding a home nestled in the forest, can be protected by pesticide applications. The only time a pine tree can be protected by a pesticide application is before the beetles attack it. Once the beetles are inside there are no effective pesticides that can be sprayed on the bark or absorbed through the root system. Nor are there any pesticides that are effective at killing the beetle as they leave the tree. The window for spraying a pine to protect it from attack is rapidly coming to a close. A check of insect development last week found that most of the mountain pine beetles were still larvae but pupa should be forming this week and the first flights of adults sometime in mid-July. The pesticides to use for treating the lower 20 or 30 feet of the trunk are those with either carbaryl or permethrin formulations specifically for controlling bark beetles.

The use of verbenone pouches to repel mountain pine beetle is not recommended for the Black Hills.

The mountain pine beetle uses a scent communication system to call in other beetles to mass-attack a tree thereby overcoming its defenses. This scent produce by the beetles as they land and begin to feed is called an aggregation pheromone. The beetles also produce another pheromone to discourage new beetles from attacking a tree that is already occupied. This is an anti-aggregation pheromone. This pheromone has been synthesized and is available in small pouches that can be stapled on the tree to repel any attacking beetles. These pouches are currently being sold in some Rapid City stores, however there is no evidence that they will work on ponderosa pines in the Black Hills. Every trial conducted in the Black Hills during the past two decades has failed and the treated trees attacked. A new trial is being conducted this year to determine if there is any improvement in the effectiveness of this product but at this time I do not recommend their use by tree owners. It would be far wiser to spray the trees if only a few high-value pines need protection, or thin the trees if a stand requires protection.

Current concerns

We are seeing a lot of frost injury on Colorado blue spruce this spring. The common symptoms are curling shoot tips and these often only appear on the south side of the tree (or south side of the windbreak row) or on trees that are in

a low location. The tips curl over a short time period and many tree owners attribute this incorrectly to herbicide drift. The symptoms associated with frost

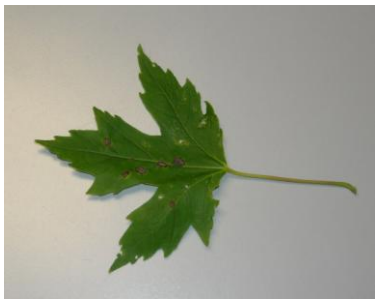
are a quick development of curled tips but no new foliage is beginning to curl at this time and the symptoms are concentrated on the south sides of the trees. The trees will not be killed by the loss of some of their shoot tips but may appear misshapen as laterals assume the role of shoot tips. This is probably best corrected by pruning out the curled tips back to a live bud or side branch. There are several other reasons for the tips to curl on a spruce. We occasionally see a shoot borer that burrows into the young developing shoot causing the tip to curl. Trees infested with the borer generally have randomly scattered curled tips rather than the injury by concentrated on the south side of the tree. If these shoots are cut open you'll find that the pith is hollow and there might even be a small larvae found inside. The other possibility is a very small mite, not the spruce spider mite but another mite species.

The first symptoms of many common leaf diseases are beginning to appear across the state. The most common foliage disease being reported this week is apple scab. This is a disease that affects apples and crabapples causing the

leaves to develop olive-drab blotches in June and the infected leaves often dropping off the tree by mid-August. In bad years, and this has every indication of becoming a bad year due to the cool wet weather we had in May being perfect for spore germination, you can find entire trees complete bare by Labor Day. At this time, the period of effective control has passed and little can be done if fungicide treatments were not initiated at bud swell and then continued on a 7- to 10-day interval. Starting now will have little effect on the disease development. The only treatment option to employ yet this season is to rake up and destroy any infested leaves as this serve as the infection source next spring.

Another common foliage disease, one that has been reported in the last two issues of the Update, is crown rust on common buckthorn. We are seeing more and heavier infections than we typically see with symptoms now appearing on the leaf petioles in addition to the leaves. There is no control for this disease on buckthorn as the host is also considered a pest.

Another foliage disease appearing a little early is tar spot (Rhytisma spp) on maples, particularly silver, sugar and the numerous cultivars of

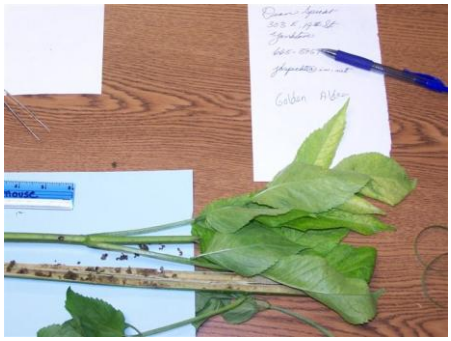


Freeman maple. The disease begins as small yellowish spots that become raised, blacken and tarlike by midsummer. Treatments are not recommended as the disease does not show up every year but this year looks like it may become a bad one. The fungicide control for the disease is an application of a copper fungicide at bud-break then two more treatments spaced about three weeks apart.

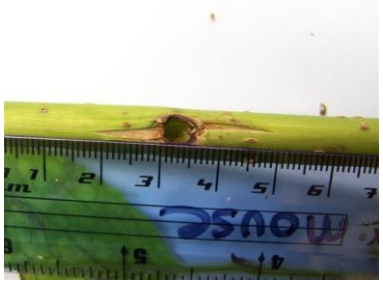
Emerald Ash Borer First Detector Program coming to South Dakota

The threat of emerald ash borer, along with other potential threats such as the Asian longhorned beetle and thousand canker disease of walnut has created the need to develop a force of volunteers that are trained to identify these pests. As these pests come closer to our state, Cooperative Extension educators and Department of Agriculture foresters may become overwhelms with requests from the public to "come out and look at my tree." Volunteers can provide a valuable first line by conducting site visits and either determining the tree is not infested or requested that the educator, foresters or other resource professional needs to examine the tree to determine if it may be infested with emerald ash borer or other exotic pests. There will be one day training sessions – 9 am to 3 pm - tentative set in Aberdeen (6/28), Pierre (7/1), Rapid City (7/6) and Sioux Falls (7/2) to train volunteers in identifying exotic pests and methods of collecting samples. Regulatory issues and how to work with the public will also be discussed during the workshop. Anyone interested in possibly attending can email John Ball at john.ball@sdstate.edu to have an information packet send directly to them.

E-samples



I received these interesting pictures from Cindy, our horticulture educator down in Yankton, of a borer in an elderberry planting. The first picture shows an elderberry (*Sambucus* spp) stem and the second a close up of the hole. This Coleopteran (beetle) called the elderberry borer (*Desmocerus palliates*) spends its time as an adult feeding on flower pollen. It generally selects broken or wounded canes for egg-laying so the eggs can be placed in the pith. Once the larvae hatch they burrow down the cane to the base. They may remain in the larval stage for two years before pupating and emerging from holes



near the base of the canes. The best control is to prune the elderberry plant to its base during the dormant season and destroy the canes.

Cindy also sent along this picture of plum pockets (*Taphrina communis*). This fungal disease appears about every year at this time. It begins as small white blisters on the developing fruit that eventually engulf the entire fruit. The infected fruit becomes larger than normal, hollow with a spongy shell. As the case with many diseases, once you see the symptoms it is too late to initiate control measures. The disease can be managed, but not eliminated, with a single application of lime sulfur just before bud break. Timing is critical to this application as too early will not protect the extending bud and too late the lime will harm the developing leaves. At this time the best that can be done is to clean up the fallen misshapen fruit.

Another disease picture that was sent in by Craig, a Department of Agriculture forester in Watertown is a gall from pine-oak rust (*Cronartium quercuum*). This rust disease alternates between pines and oaks. The symptoms on the oak are often just a sooty black powder on the underside of the leaves and are not a serious threat to the tree. We will probably start seeing this show up in another couple of weeks. The galls on the pines are a more serious condition and may eventually girdle the infected branch or stem. The best control is to prune out any infected branches. If the infection is on the trunk, the tree will probably need to be removed.

I also received a picture of maple bladder galls appearing on a silver maple leaf. These galls are the work of the maple bladder gall mite (*Vasates quadripedes*). The mite moves from the bark to the expanding leaves and feeds on the underside of the foliage. This results in a colorful gall forming on the upper side of the leaves, usually beginning as a green bump but then becoming red, yellow and black as the season progresses. The galls may look as though they are a serious threat to the tree but they are almost insignificant in the injury they cause even if the entire leaf is covered with them. No control is recommended and very few are even effective.

Samples received

Campbell County **What is happening to this oak tree in Mobridge? I found some aphids but there are also some small holes near the base of the leaves.**

We have had a number of oak defoliators out this spring, most notably an oak leaf roller that left holes and curls in the foliage of a large number of oaks. This damage closely resembles that caused by this insect but since the insect has come and gone I cannot be certain.

Campbell County **Why are these chokecherries from Herreid declining? The foliage has holes in them and some trees are producing smaller than normal leaves.**

The symptoms on the leaves are consistent with that seen for shothole disease aka cherry leaf spot. The disease is caused by a fungus that initially causes purplish spots on the leaf. After about a week the spots turn brown and dry out then soon separate and fall out of the leaf forming these spots. If the leaves are heavily infected, and these are not, then the leaf may turn yellow. The control is an application of a fungicide containing chlorothalonil as the leaves are expanding in the spring. As to the smaller than normal leaves, this may be due to poorly drained soils. Cherries demand a well-drained soil; it is wet at all in the spring the trees and leaves can become stunted.

Codington County **Is this cushion rust on spruce?**

Yes, this is Weir's cushion rust, a foliage disease on spruce, particularly blue spruce, that we are seeing more and more East River. The control is similar to needlecast, applications of a fungicide at bud-break and then repeat two more times at 10-day intervals.

Faulk County **Ellen would like to know what kind of tree this is. It is a beautiful tree about 15 years old.**

This is the littleleaf linden (*Tilia cordata*) and I agree they can be beautiful trees, particularly when they begin to flower which should be in another week or so. The flowers, though small, are very fragrant.

Haakon County **What is going on with these cedar trees? They are starting to turn brown and the owners would like to take care of the problem before it gets worse.**

I was able to find some spider mites on the sample but the real problem appears to be phomopsis twig blight. The most common symptoms are yellowing and browning of the current year's shoot foliage. The affected foliage eventually turns red then grey. The symptoms from twig blight caused by phomopsis and another fungus know as kabatina are very close, often katabina symptoms show up first, often in April but otherwise identification requires an examination of the fruiting structures. The control for phomopsis is generally application of a copper fungicide beginning in mid-May and continuing on a two-week interval until the

juniper growth hardens off, usually mid to late June when the weather turns warm and dry. The disease is more of a tip killer than a tree killer.

Hutchinson County **What is causing these leaves to yellow and develop brown margins?**

While there are some indications of anthracnose, a fungal infection, the primary problem is iron chlorosis. The yellowing foliage, with the main veins remaining green, is common on silver maples in our state. This disorder is due to the alkaline soils limiting the availability of iron to the tree. Merely adding iron will not improve the tree, unless it is in a chelated form, as the newly applied iron is also quickly rendered unavailable to the tree. We are seeing more of the problem this year as the moist soils have further limited root growth, thus increasing update of elements, including microelements. If this is a small tree, the best solution is to replace it with a species better adapted to alkaline soils such as hackberry or oak.